



OxyDiesel*

An Oxygenated Diesel Fuel Formulation for Compression-Ignition Engines

Since the early 1990s, international, U.S., and state regulatory momentum has been building in an effort to control the level and types of exhaust emissions from heavy duty engines and vehicles. In addition to increasingly strict exhaust emissions standards for truck and bus engines, the Clean Air Act Amendments of 1990 drastically cut the allowable limits of sulfur found in diesel fuel based on strong environmental evidence of its effect on particulate and other emissions.

Pure Energy Corporation has formulated novel oxygenated diesel fuel blends to improve diesel's environmental impact and address increasing concerns about global warming – all in a cost competitive fashion for use in unmodified engines. The resulting fuel, OxyDiesel (patent pending), is in demonstration and the early stages of commercialization. By introducing oxygen into conventional diesel in the form of renewable ethanol, particulate matter can be reduced and other emissions improved. Pure Energy's formulation and additive package improve temperature stability, energy content and lubricity of the diesel/ethanol blend and create a clear, stable fuel. Without the additive package diesel and ethanol quickly separate under cool and cold temperature conditions.

Composition:	80 - 84% Low sulfur No.2 diesel, 15% fuel ethanol, 1 – 5% PEC additive package (2% average is expected)
Cetane:	2 to 5 cetane points above blendstock diesel
Low Temperature Performance:	OxyDiesel is stable to at least - 22 °F (no separation and unlike diesel, no gelling)
Energy Content:	OxyDiesel ~ 126,000 to 128,000 Btu/gal vs diesel ~ 135,000 Btu/gal
Fuel Economy:	Tests to date show up to 7% less mileage
Sulfur:	Sulfur is reduced 17 – 20% from the base diesel (ethanol and additive contain no sulfur)
Blending:	OxyDiesel can be “in-line” blended at the terminal using existing equipment, facilities and blending techniques.
Lubricity:	Similar to diesel
Water Tolerance:	Up to 3% water in final fuel
Bio-degradable:	Readily bio-degradable in standard 28 day ASTM test
Cost:	Estimate \$0.05 to 0.07 above No. 2 diesel (in full scale production). Demonstration and pre-production pricing is higher.

For more information see our website: www.oxydiesel.com

*Registered with the U.S. Environmental Protection Agency



P-Series Fuel

P-Series is a cleaner burning liquid fuel for cars and light duty trucks which are flexible fuel vehicles (FFVs). It has superior environmental and performance characteristics. P-Series is a blend of ethanol, natural gas liquids and MTHF (a co-solvent made from biomass). Pure Energy Corporation ("PEC") holds the exclusive world-wide license from Princeton University to commercialize P-Series fuel, which was invented there in research sponsored by PEC. P-Series, derived largely from biomass and produced domestically, is engineered to achieve desirable performance characteristics for use in spark ignited engines.

Fuel Production - The Company, in affiliation with the Tennessee Valley Authority (TVA), is designing a full-scale facility to demonstrate economic production of several P-Series components. Various units of the process have been run successfully at the pilot and demonstration scale. The first commercial facility is expected to produce 25-50 million gallons of P-Series annually. P-Series is expected to be priced competitively with gasoline. An aggressive growth schedule should see multiple facilities producing P-Series by 2005 in the United States and internationally.

Emissions - P-Series in its production, and when run in vehicles, creates significantly less emissions than gasoline. Production and use of P-Series is estimated to create 50% fewer greenhouse gases than gasoline as estimated by Argonne National Laboratory. Tests conducted at Automotive Testing Laboratories show that P-Series reduced hydrocarbon emissions by 35%, carbon monoxide emissions by 15%, and ozone forming potential by 40%, when compared to gasoline (Phase II, RFG).

Feedstock - P-Series is produced largely from renewable biomass such as agricultural materials and residues and paper and wood wastes. Currently collected quantities of suitable feedstock could be used to produce more than 10 billion gallons of P-Series per year.

Market - Target markets for P-Series are those public fleets that are subject to alternative and clean fuel vehicle purchase requirements established under The Energy Policy Act of 1992 ("EPACT") and the Clean Air Act Amendments of 1990 ("CAAA"). The CAAA non-compliance areas of the United States are the Company's target locations for fuel production and distribution. After an extensive petition process, the U.S. Department of Energy is preparing via a final rulemaking to designate P-Series as an "Alternate Fuel" under EPACT. Current production FFV's include Ford Taurus, Chrysler, Dodge and Plymouth minivans and Ford Ranger pickup trucks. FFV's are being mass produced at a rate of several hundred thousand per year.

It is Pure Energy's goal with P-Series to supply fleets, and eventually a broader segment of the motoring public, with an alternative fuel to satisfy legislative mandates, improve air quality, and enhance energy security with minimum adjustment to the existing fuel infrastructure and the consumer. In furtherance of these goals Pure Energy is seeking warranty coverage for P-Series.

For more information, contact us through our website at www.pure-energy.com.